



## Materials Declaration Form

<b>IPC Form Type *</b>	<b>1752</b> Distribute	<b>Version</b>	<b>2</b>
<b>Sectionals *</b>	Material Info Manufacturing Info	<b>Subsectionals *</b>	A-D <i>* : Required Field</i>

Supplier Information			
<b>Company Name *</b>	<b>STMicroelectronics</b>	<b>Response Date *</b>	<b>2013-09-11</b>
<b>Contact Name *</b>	Refer to "Supplier Comment" section	<b>Contact Title</b>	Refer to "Supplier Comment" section
<b>Contact Phone *</b>	Refer to "Supplier Comment" section	<b>Contact Email *</b>	Refer to "Supplier Comment" section
<b>Authorized Representative *</b>	<b>Giuseppe Vitali Palma</b>	<b>Representative Title</b>	AMS & IPD Materials Declaration Champion
<b>Representative Phone *</b>	Refer to "Supplier Comment" section	<b>Representative Email *</b>	Refer to "Supplier Comment" section
<b>Supplier Comment</b>	Online Technical Support - STMicroelectronics : <a href="http://www.st.com/internet/com/support/online_tech_support.jsp">http://www.st.com/internet/com/support/online_tech_support.jsp</a>		

**Uncertainty Statement**

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**Legal Statement**

<b>Supplier Acceptance *</b>	<b>true</b>	<b>Legal Declaration *</b>	<b>Standard</b>
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**Legal Statement**

Supplier certifies that it gathered the provided information and such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s), the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Supplier's liability and the Company's remedies for issues that arise regarding information the Supplier provides in this form.

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
	C2DZ*VJ81B53	A	LGGA	2013-09-11
Amount	UoM	Unit type	ST ECOPACK Grade	
1900.00	mg	Each	ECOPACK® 2	

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles	 life.augmented	
NAC	NAC	NAC		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy		
Not Applicable ; if coating is used o	Tin (Sn), matte, annealed	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape
SIP	10X9.1X4.5	3	Through-hole
Comment	Package: TO 220 AB NON ISOL		

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	false
Product(s) meets EU RoHS requirements except lead in solder and this usage may qualify under the lead in solder '7b' exemption (other selected exemptions may apply)	false
Product(s) meets EU RoHS requirements by application of the selected exemption(s)	true
Product(s) does not meet EU RoHS requirements and is not under exemptions	false
Product(s) is obsolete, no information is available	false
Product(s) is unknown, no information is available	false
Exemption Id.	Description
7a	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)

QueryList :REACH-19 December 2012				
Query				Response
The product does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH				true
CategoryLevel_Name	CategoryLevel_Threshold	amount in product (mg)	Application	ppm in product

Material Composition Declaration						Mfr Item Name	C2D2*VJ81B53					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
die (s)	Other inorganic materials	3.906	mg	supplier	die	Silicon (Si)	7440-21-3		3.675	mg	940860	1885
				supplier	metallization	Aluminium (Al)	7429-90-5		0.152	mg	38914	78
						Titanium (Ti)	7440-32-6		0.003	mg	768	2
						Tungsten (W)	7440-33-7		0.005	mg	1280	3
						Nickel (Ni)	7440-02-0		0.017	mg	4352	9
				supplier	passivation	Silicon Oxide(SiO2)	7631-86-9		0.022	mg	5632	11
				supplier	back side metallization	Titanium (Ti)	7440-32-6		0.002	mg	512	1
						Silver(Ag)	7440-22-4		0.005	mg	1280	3
						Nickel (Ni)	7440-02-0		0.025	mg	6400	13
				Leadframe	Copper & Its alloys	1167.427	mg	supplier	alloy	Copper (Cu)	7440-50-8	
		Iron (Fe)	7439-89-6						0.537	mg	460	275
		Iron Phosphide (FeP)	26508-33-8						0.981	mg	840	503
supplier	metallization	Nickel (Ni)	7440-02-0						0.013	mg	11	7
		Phosphorus (P)	12185-10-3						0.001	mg	1	1
Soft solder	Other organic materials	3.164	mg	JIG R	solder	Lead (Pb)	7439-92-1	7a-Lead in high me	3.022	mg	955120	1550
				supplier	solder	Silver (Ag)	7440-22-4		0.079	mg	24968	41
						Tin (Sn)	7440-31-5		0.063	mg	19912	32
Bonding wire	Other inorganic materials	0.201	mg	supplier	wire	Copper (Cu)	7440-50-8		0.201	mg	1000000	103
						Silica, vitreous	60676-86-0		627.323	mg	870000	321704
encapsulation	Other organic materials	721.061	mg	supplier	mold compound	Epoxy resin	Proprietary		72.106	mg	100000	36977
						Phenol resin	Proprietary		18.027	mg	25001	9245
						Carbon Black	1333-86-4		3.605	mg	5000	1849
connections coating	Solder	4.241	mg	supplier	solder alloy	Tin (Sn)	7440-31-5		4.241	mg	1000000	2175